

# Governing Urban Transformation

## Air Freight

12<sup>th</sup> May 2017

9204709 and 9111152

Author declaration:

I 9111152 confirm that this report is based on my own work and that I am happy with both my own and my partner's 9204709 contribution to the final submitted version.

**Table of Contents**

**Executive Summary ..... 1**

**Introduction ..... 5**

**Context ..... 6**

**Methodology..... 9**

**Findings.....10**

**Conclusion and Recommendation .....15**

**Bibliography .....17**

## **Executive Summary**

Greater Manchester Combined Authority (GMCA) have commissioned this report to examine the challenges that changes in the air freight industry may pose to the Greater Manchester region. Manchester Airport is the fourth largest operator of air freight in the UK by tonnage, but with increasing growth in air traffic movements and economic expansion of the North of England, volumes are expected to increase.

To complete the challenge set to us by GMCA we will use a myriad of secondary data resources, including academic literature as well as a wide range of grey and white paper documents. The findings of the investigation have shown that there is significant potential for growth of air freight following the £800 million investment into expanding the Airport, creating an Airport City as a core initiative in the Manchester Airport Enterprise Zone. The World Logistics Hub, a crucial factor in accessing the air freight market, will be part of this project and has already attracted investment from global logistics companies. This report offers three recommendations to GMCA to further economic growth in the region.

## **Introduction**

Manchester Airport is the key international gateway in the North of England, handling 94% of direct long haul passengers travelling to and from the region (TfN, 2017: 21). Air freight is extremely important in the global economy; industries requiring high value goods to be moved quickly, can use air freight to do so. A small proportion of total freight movements concern air cargo, yet the value of these goods is significantly higher than other cargo forms.

This report has been produced to address growing challenges in the air freight industry, set by the Greater Manchester Combined Authority (GMCA). The report will assess how the air freight industry will change over the coming years and the implications this will have on Manchester Airport and the Greater Manchester area. First, the report will look over the context of the investigation, with a look at the current position of UK air freight, how globalisation affects the industry and then a more specific look at air freight at Manchester Airport.

This report will utilise academic literature and policy documents published by the various authorities that oversee the operation of Manchester Airport and the planning of future developments across Greater Manchester.

## Context

This chapter will look at the context surrounding the air freight industry.

2.3million tonnes is flown in and out of the UK and 480million tonnes is moved via the UK's seaports (TfN, 2017: 15). However, the total value of air freight could reach up to 35% of world trade by value (ibid).

The vast majority of air freight is moved via bellyhold of passenger planes, rather than dedicated freighters. 67% of air freight by weight in the UK is shipped using commercial passenger airlines (Dft, 2009: 14). The UK's air freight industry is dominated by London Heathrow, East Midlands and London Stansted Airports, due to factors such as: reduced landing fees, strategies of major logistics firms (Dicken, 2007), and the size of the freight market in the South East; leading to economies of scale and reduced costs per tonne (TfN, 2017). Location is also key to air freight airport choice, yet Gardiner *et al.* (2005) give the example of an company operating at Manchester Airport, likely viewing access to the UK market as a whole rather than solely the North of England.

Globalisation and other external factors will continue to influence the air freight industry in the UK. Just-in-Time (JIT) production and the subsequent importance of rapid delivery logistics shows air freight to be the ideal way to transport goods quickly around the world (Dft, 2003); supplying the 'on demand' provision of goods and services (Boeing, 2016: 62).

The air cargo industry is pro-cyclical, meaning strong economic conditions will lead to more activity (Schreindorfer, 2006). The key influence on air freight demand is arguably the global economic and trade growth; with a proven relationship between the levels of air cargo volume and GDP (Kasarda and Green, 2005).

There are five key threats identified for the future of the air freight industry (Harrington, 2006); listed below:

- 1) Rising fuel prices,

- 2) Security concerns,
- 3) Revised inventory management policies,
- 4) Competition from other modes of transport,
- 5) Industry consolidation.

Manchester Airport serves as the link to the global economy for Greater Manchester and the North of England (TfGM, 2017; TfN, 2015). The airport operates 70 airlines to approximately 200 destinations, including the key markets in Hong Kong, UAE and North America (TfGM, 2017). This connectivity presents an attractive opportunity for bellyhold cargo operations.

The Airport employs 21,500 people on site, with good public transport and rail links connecting the Airport to the cities of Manchester, Leeds and Sheffield. The Metrolink provides transportation to the Airport from local neighbourhoods, enabling users and employees to access the site.

Current developments include a new £800m expansion; becoming the UK's first Airport City (Manchester Airport Group, 2011).

Manchester Airport does not serve as a hub for logistics companies. UK bases for DHL, UPS and TNT are at East Midlands Airport; the UK's busiest pure-cargo airport, with 34% of all freight handled by dedicated freighter aircraft (DfT, 2009; 19). Manchester Airport and London Heathrow have to abide by the Night Noise Policy (Manchester Airport Group, 2012), troublesome considering the peak hours for cargo flying are between 20:00 and 05:00 each weekday (DfT, 2009). East Midlands however has zero nighttime restrictions, a distinct advantage for freighter operations according to Eurocontrol (2009); as well as the fact that 90% of England and Wales is within a 4 hour drive due to its central location.

London Airport's benefit from market access in the South East; Heathrow and Stansted are the 1<sup>st</sup> and 3<sup>rd</sup> largest cargo airports in the UK respectively (DfT, 2009: 19). Of all UK air freight, 61% flows through Heathrow, utilising the large capacity of bellyhold cargo available (ibid). London Stansted Airport hosts Fedex's UK operations. Much like East Midlands Airport, a significant amount of dedicated freighter traffic is seen at Stansted (Plane Flight Tracker, 2014).

Manchester Airport will see an increase in air freight activity; with an increase in passenger flights, development of the new Airport City, construction of the World Logistics Hub and the continued economic growth in the North of England.

## **Methodology**

The purpose of this section is to give a comprehensive overview of the research design.

To engage with the challenges mentioned in the contextualisation of the air freight industry, a logical and thorough investigation is required, exploring both current trends in air cargo operations, as well as an outlook toward the future for Manchester Airport as a UK cargo hub. Contemporary air freight movements will be analysed, and research regarding industry-wide threats will be examined and then applied through a localised focus to consider the implications for Manchester Airport.

The research process involves engaging in a systematic review of secondary data, referring to both academic and grey literature. Policy documents, industry reports, cargo factsheets and a plethora of freight-relevant blog sites will be analysed alongside a number of relevant academic publications exploring core themes and concepts within globalisation literature. Initial comprehension of the scale of the air freight industry was gathered through observing flight tracking websites, displaying world cargo movements in real time (Plane Flight Tracker, 2014).

Data collection methods were chosen to achieve the broad understanding needed to respond to the key research questions presented; producing a number of useful recommendations for the future that can be observed, analysed and effectively implemented by the GMCA.

The three research questions to be answered through extensive discussion are as follows:

1. What is the current air freight climate at Manchester Airport?
2. In what ways will future stresses and pressures expected for the air cargo industry be experienced at Manchester Airport?
3. What is Manchester doing in order to adapt and react to these challenges?

## Findings

This chapter will assess the findings of this investigation and answer the three research questions stated in the previous chapter.

### *1.) What is the current air freight climate at Manchester Airport?*

Manchester Airport operates 6% of UK air freight operations (DfT, 2009); the fourth largest airport in terms of freight handling volume (CAA, 2016a). However, there are numerous contradictions which can be found when analysing Manchester Airport air freight volumes. Considering the industry's future is trending toward increased regulation in the face of heightened security measures (IATA, 2015), it was surprising to discover the lack of concurrence in exact tonnage numbers. Datasets provided annually by the Civil Aviation Authority, state the figure for 2016 to be 109,630 tonnes (CAA, 2016b); with 98,718 tonnes of the total being transported through passenger aircraft as bellyhold cargo (ibid). Yet, according to the airport's cargo factsheet, 97,000 tonnes of import and export freight and mail is handled annually (MAG, 2017a). 120,000 tonnes is also listed (MAG, 2017b). Consistency within freight volume figures is required to fully understand current operations at Manchester Airport, otherwise problems arise when planning around future growth.

The Far East, North America and the Middle East are the primary destinations for freight imports and exports from Manchester (ibid). Strong cargo growth is being experienced, with the increase in freight volumes linked to aircraft size upgrades on carriers from the Middle East, such as Etihad, Saudia and Qatar Airways (Begum, 2016). Largest volumes arrive and depart via Emirates Airlines passenger planes; the Dubai-based company operates Airbus A380 services twice daily alongside a Boeing 777 service (Emirates, 2017); three wide-bodied passenger aircraft capable of transporting air cargo direct to and from Middle Eastern markets each day. The future of Manchester's air freight will be reliant on the ability of the governing bodies and relevant stakeholders in adopting new technological changes and adapting to future threats to the air cargo industry (Terry, 2012).

2.) *In what ways will future stresses and pressures expected for the air cargo industry be experienced at Manchester Airport?*

There is general consensus in the literature that five fundamental challenges are facing the future of the air cargo industry; rising fuel prices, increasing security concerns, revised inventory management policies, industry consolidation, and increasing competition from other modes of transport (Harrington, 2006); as well as the need to adapt to technological innovations (Air Cargo News, 2016). The IATA Cargo Committee addresses these significant issues using ten key industry priorities outlined in the Cargo Agenda (IATA, 2015). This infers that pure freight operators are likely to be affected the most in the future.

Given that the majority of freight at Manchester Airport is bellyhold cargo (CAA, 2016b), the knock-on effects of industry vulnerability in freighter movements may not be felt as strongly as in East Midlands or Stansted airports; the UK's largest for pure cargo (Air Cargo News, 2015). However, Manchester Airport will have to adapt to a number of future industry pressures, two are highlighted - security concerns and competition from other modes of transport.

Security concerns are increasing worldwide, with enhancing safety and improving security listed as the two paramount priorities (IATA, 2015). Where passengers are involved, safety is of primary concern and therefore bellyhold cargo screening requirements has been heightened to provide greater protection from geopolitical volatility; causing increased costs and time-delays (ibid), simultaneously troubling pricing system structures (Mukesh, 2016). Decreasing differentials between ocean and air transit could mean that sea transit replacing air shipments is economically favourable (Harrington, 2006). Furthermore, the concept of near-shoring is concerning. An increasing number of manufacturing facilities are being relocated closer to markets cutting both costs and air cargo demand (Fernandes, 2015).

The second major challenge involves increasing competition from other freight transportation modes. Manchester Airport has strong links with the Middle East and Far East; potentially impacted by the advent of the 'New Silk Road' (IATA, 2015). Increased rail connectivity with the Far East could reduce air cargo movements, with businesses opting

instead to ship via freight trains. The reopening of the Manchester Ship Canal and the development of the port network (Atlantic Gateway, 2012) could also impact Manchester Airport's freight operations. Finally, the commissioning of the High Speed Two rail link to London opens availability on West Coast Main Line meaning that transporting from London Heathrow, which has unrivalled global connectivity, to northern markets becomes easier and far more fluid (HS2 Ltd, 2016). Conversely, this could be beneficial to Manchester Airport, as companies would be able to access both the northern gateway and southern markets easily.

Manchester Airport is showing signs of adaptation, pushing for the development of the UK's first Airport City, home to Etihad, Sherwin Williams, PZ Cussons, and SCA Hygiene (MAG, 2015); alongside the opening of a World Logistics Hub, south of the airport, attracting global businesses such as DHL and Amazon through the appeal of the Economic Zone (Begum, 2016b; MAG Property, 2017a).

### *3.) What is Manchester doing in order to adapt and react to these challenges?*

The changing climate of the air freight industry presents many implications for urban planners focusing on conurbations around large airports. Manchester Airport and Greater Manchester is no exception, with a growing economy of the North and increasing aircraft movements. Changes must be made to the surrounding area and the airport's facilities to enable Greater Manchester to benefit from increased freight.

Significant developments to Manchester Airport include the transformation of the surrounding area into the first Airport City in the UK; a core initiative of the Enterprise Zone (EZ) (Manchester Airport City Enterprise Zone, 2017) encouraging business investment (Urban Strategies Inc, 2012).

The World Logistics Hub will provide an attractive industry environment whilst managing future growth in air freight. DHL have committed to purchasing 37,308 square feet to build a

new logistics centre (Airport City Manchester, 2010: 21). Surface access is a key priority for those involved in planning; with increased freight and logistics movement expected to put a significant strain on the road network both within and surrounding Manchester Airport.

Access to the M56 is a paramount design feature that will enable efficient functionality without affecting the Airport's internal traffic (Urban Strategies Inc, 2012). The framework for the Manchester Airport EZ by Urban Strategies Inc. (2012) states that 'a simple road system' will allow access to air freight areas and to Junction 6 of the M56, shown in Figure 1; thus allowing freight to move quickly to the strategic road network for delivery. Traffic from the World Logistics Hub will be directed away from other areas of employment in the EZ to maintain fluidity.



Figure 1: Location of World Logistics Hub at Manchester Airport. Source: Airport City Manchester (2010)

Wythenshawe will also be impacted by any changes in the air freight industry. The creation of employment opportunities at Manchester Airport, through increases in freight handling, highlights needs for more housing and neighbourhood facilities. Wythenshawe's proximity to the airport provides an ideal location for both housing workers and hosting industries supporting Airport activities (Urban Strategies Inc, 2012).

Improved links from Wythenshawe to the Airport will be required to support movement of employees to the workplace. Urban Strategies Inc (2012) state that a Metrolink extension through Wythenshawe supplemented by a new Metrolink-Bus interchange will significantly boost connectivity, strengthening links, and allowing businesses within the EZ to gain access to the labour pool.

## Conclusions & Recommendations

Based on research into Manchester Airport's current air freight patterns and the ability to negotiate future challenges, it is evident that Manchester Airport stakeholders are acting. Planned projects and developments, are in place for the benefit of Greater Manchester's economic future; with Airport City, the Enterprise Zone, the World Logistics Hub as well as plans for the expansion of intra-city transport links.

From our studies, we have formulated three fundamental recommendations for the GMCA to consider and implement in order to maximise future benefits.

### *1.) Continue with the expansion of the Manchester Airport Enterprise Zone*

GMCA and MAG need to attract more private investment from firms similar to DHL; ensuring that the World Logistics Hub is fully utilised. Currently, all the 1.4m square feet has now almost fully been purchased for use (MAG, 2015).

Advertising the bespoke facilities available at the World Logistics Hub (MAG Property, 2017b) will attract further interest and could create the potential for expansion of the Hub. Extra economic benefits for Greater Manchester can then be exploited fully through increased employment and increased economic output.

### *2.) Increase the connections from Manchester Airport to the rest of Greater Manchester*

GMCA and TfGM work together to increase connectivity of Greater Manchester areas, such as Bolton, Oldham and Wigan, to Manchester Airport; bringing more people into contact with employment and business opportunities at the World Logistics Hub and other sites within the Airport City.

To do this, GMCA and TfGM should consider extending parts of the Metrolink to outer areas whilst also improving and expanding current connections.

### *3.) Attract increased pure freighter aircraft movements*

With the new facilities offered by Manchester Airport's World Logistics Hub, GMCA should encourage MAG to attract more pure freighter aircraft movements, thus fully capturing the benefits presented by the investment in the Hub. A look to overtake East Midlands by becoming the largest freight airport in the UK outside of London could be targeted.

The IATA states that nothing can beat the speed of air, noting also that dedicated freighters are an essential part of air cargo (IATA, 2015). Supplementing bellyhold cargo with an increased freighter service would promote further economic growth.

Partnerships are key to approaching the future, with stakeholder engagement, public participation and cross-sectoral views being obtained to construct plans and policies for the future.

## **Bibliography**

Air Cargo News. (2015) 'Stansted: London's Freighter Airport'. *Air Cargo News*. [Online]. 25th March 2015. [Accessed 5 May 2017]. Available from: <http://www.aircargonews.net/news/single-view/news/stansted-londons-freighter-airport.html>

Air Cargo News. (2016) 'Air cargo innovation: Looking into the future'. *Air Cargo News*. [Online]. 6th October 2016. [Accessed 5 May 2017]. Available from: <http://www.aircargonews.net/news/airlines/single-view/news/air-cargo-innovation-facing-the-challenges.html>

Airport City Manchester. (2010). *Global Logistics*. Manchester: Airport City Manchester.

Atlantic Gateway. (2012) *Atlantic Gateway: Business Plan July 2012*. [Online]. [Accessed 8 May 2017]. Available from: <http://www.atlanticgateway.co.uk/assets/downloads/ag-businessplan.pdf>

Begum, S. (2016a). Bumper year for cargo and freight at Manchester Airport. *Manchester Evening News*. [Online]. 24th May 2016. [Accessed 5 May 2017]. Available from: <http://www.manchestereveningnews.co.uk/business/business-news/bumper-year-cargo-freight-manchester-11379779>

Begum, S. (2016b). Airport City Manchester agrees £12.2m forward sale of logistics facility. *Manchester Evening News*. [Online]. 6th September 2016. [Accessed 5 May 2017]. Available from: <http://www.manchestereveningnews.co.uk/business/property/airport-city-manchester-agrees-122m-11847715>

Boeing. (2016). *World Air Cargo Forecast: 2016-2017*. Seattle: Boeing Commercial Airplanes.  
Civil Aviation Authority. (2016a). *Freight 2006-2016 Tonnes*. [Online]. [Accessed 5 May 2017]. Available from:

[http://www.caa.co.uk/uploadedFiles/CAA/Content/Standard\\_Content/Data\\_and\\_analysis/Datasets/Airport\\_stats/Airport\\_data\\_2016\\_annual/Table\\_13\\_2\\_Freight.pdf](http://www.caa.co.uk/uploadedFiles/CAA/Content/Standard_Content/Data_and_analysis/Datasets/Airport_stats/Airport_data_2016_annual/Table_13_2_Freight.pdf)

Civil Aviation Authority. (2016b). *Airport Data 2016: Freight by Aircraft Configuration 2016*.

[Online]. [Accessed 5 May 2017]. Available from:

[http://www.caa.co.uk/uploadedFiles/CAA/Content/Standard\\_Content/Data\\_and\\_analysis/Datasets/Airport\\_stats/Airport\\_data\\_2016\\_annual/Table\\_15\\_Freight\\_by\\_Aircraft\\_Configuration.pdf](http://www.caa.co.uk/uploadedFiles/CAA/Content/Standard_Content/Data_and_analysis/Datasets/Airport_stats/Airport_data_2016_annual/Table_15_Freight_by_Aircraft_Configuration.pdf)

Department for Transport. (2003). *The Future of Air Transport*. London: Department for Transport.

Department for Transport. (2009). *The air freight end-to-end journey*. London: Department for Transport.

Dicken, P. (2007) *The Global Shift: mapping the changing contours of the world economy*. London: SAGE Publications.

Emirates. (2017). *Flights from Dubai (DXB) to Manchester (MAN)* [Online]. [Accessed 5 May 2017]. Available from:

<https://www.emirates.com/uk/english/destinations/DXB/MAN/flights-from-Dubai-to-Manchester>

Eurocontrol. (2009) 'Dependent on the Dark: Cargo and other Night Flights in European Airspace'. *EUROCONTROL Trends in Air Traffic*. Volume 5. [Online]. [Accessed 5 May 2017]. Available from: <https://www.eurocontrol.int/sites/default/files/publication/files/tat5-night-freight-report.pdf>

Fernandes, S. (2015). 'Threats to Profitability in the Air Cargo Industry'. *Mercator*. [Online]. 18 June 2015. [Accessed 5 May 2017]. Available from:

<https://www.mercator.com/blog/threats-to-profitability-in-the-air-cargo-industry>

Gardiner, J., Ison, S., and Humphreys, I. (2005) Factors influencing cargo airlines' choice of airport: An international survey. *Journal of Air Transport Management* 11(6), November 2005, pp393-399.

International Air Transport Association. (2015). *IATA Cargo Strategy: August 2015*. Montreal: International Air Transport Association.

Harrington, L. (2006). 'High 5: Air Cargo's Top Challenges'. *Inbound Logistics*. [Online]. October 2006. [Accessed 5 May 2017]. Available from:  
<http://www.inboundlogistics.com/cms/article/high-5-air-cargos-top-challenges/>

Kasards, J. and Green, J. (2005). Air Cargo as an engine for economic development: a note on opportunities and constraints. *Journal of Air Transport Management*. 11, pp 459-462.

Manchester Airport City Enterprise Zone. (2017) Manchester Airport City Enterprise Zone. *MAG Developments*. [Online]. [Accessed 4 May 2017]. Available from:  
<http://www.manchesterairport.co.uk>

Manchester Airport Group. (2011). *Manchester Enterprise Zone*. Manchester: Manchester Airport Group

Manchester Airport Group. (2012). *Night Noise Policy 2012-2017*. Manchester: Manchester Airport Group.

Manchester Airport Group. (2015). 'Airport City Manchester Announces 75,000 Sq Ft Office Scheme'. [Online]. 11th March 2015. [Accessed 5 May 2017]. Available from:  
<http://book.manchesterairport.co.uk/manweb.nsf/content/AirportCityManchesterannounces75,000sqftofficescheme>

Manchester Airport Group Property. (2017a). 'Airport City Embarks on £15 million Enterprise Way Infrastructure Project'. *MAG Property*. [Online]. 8 March 2017. [Accessed 6 May 2017]. Available from: <http://www.magproperty.co.uk/post/airport-city-manchester-embarks-15million-enterprise-way-infrastructure-project/>

Manchester Airport Group Property. (2017b). 'Airport City Manchester'. *MAG Property*. [Online]. [Accessed 5 May 2017]. Available from: <http://www.magproperty.co.uk/building/airport-city-manchester-2/>

Manchester Airport Group. (2017a). *Cargo Factsheet* [online]. [Accessed 5 May 2017]. Available from: <http://www.manchesterairport.co.uk/about-us/media-centre/factsheets/cargo/>

Manchester Airport Group. (2017b). *Fact Sheet: Cargo* [online]. [Accessed 5 May 2017]. Available from: <http://www.manchesterairport.co.uk/about-us/cargo/cargo-fact-sheet/>

Mukesh, G. (2016). 'All-In Rates: The Future of the Air Cargo Industry'. *Mercator*. [Online]. 15 August 2016. [Accessed 5 May 2017]. Available from: <https://www.mercator.com/blog/all-in-rates-the-future-of-the-air-cargo-industry>

Plane Flight Tracker. (2014). *Cargo Airline Tracker*. [Online]. [Accessed 5 May 2017]. Available from: <http://www.planeflighttracker.com/2014/04/cargo-airlines-tracker.html>

Schreindorfer, D. (2006). *Air cargo industry investment thesis*. Iowa: University of Iowa

Terry, L. (2012). 'Air Cargo's Future: Ready for Anything'. *Inbound Logistics*. [Online]. June 2012. [Accessed 5 May 2017]. Available from: <http://www.inboundlogistics.com/cms/article/air-cargos-future-ready-for-anything/>

Transport for Greater Manchester. (2011). *Local Sustainable Transport Fund Greater Manchester's Large Project Bid: Business Case*. Manchester: Transport for Greater Manchester

Transport for Greater Manchester. (2017). *Greater Manchester Transport Strategy 2040*. Manchester: Transport for Greater Manchester

Transport for the North. (2015). *The Northern Powerhouse: One Agenda, One Economy, One North*. Manchester: Transport for the North.

Transport for the North. (2017). *Independent International Connectivity Commission Report*. Manchester: Transport for the North.

Urban Strategies Inc. (2012). *Manchester Airport City Enterprise Zone Framework Plan*. Manchester: Manchester City Council.